

# Desert Tortoise

## (*Gopherus agassizii*)—Threatened

### Description

The desert tortoise has a domed shaped shell. Shells of adult tortoises may be up to 15 inches long. The upper shell (carapace) is oblong and is brown in color with the center scutes often being yellowish. The lower shell (plastron) is yellowish, with brown along the scutes margins (outer edges of the shell). For the male tortoise, the plastron is concave. The female tortoise has a flat plastron. The adult throat scutes project beyond the carapace, for protection from predators.

The shell has several main purposes. One is protection from both predators and the sun. The shell enables the tortoise to reduce water loss. This is a great asset when water is scarce.



Photo courtesy of Utah Division of Wildlife Resources

The front and back feet and legs are of about equal size. The hind legs are round, stumpy, and elephantine like. The front limbs are flattened and heavily scaled for digging burrows and ground pockets for nests. The reddish tan head is small, and rounded in front. The iris is a greenish-yellow color.

Tortoises may live 80 or more years, with average life spans being well over 50 years. They can weigh between 14 and 20 pounds, with some individuals weighing even more.

### Distribution and Habitat

The desert tortoise species can be separated into three distinct groups. There is the “California type” found in California and southwestern Nevada; the “Sonoran type” which lives in Arizona south of the Grand Canyon; and the “Beaver Dam Slope type” living at Beaver Dam in the extreme southwestern corner of Utah.

Tortoises thrive in sparsely vegetated deserts and semi-arid grasslands, canyon bottoms, and on rocky hillsides at elevations between 500 to 2700 feet. They construct burrows by digging into dry, gravelly soil under bushes, in arroyo banks or at the base of cliffs. Tortoise survival rates depends on the habitat in which they live. Dens are usually made in gravels that form portions of the banks of stream channels. The interior is usually widened to a width greater than that of a tortoise. Turns in the den are common and many times there is more than one chamber in each burrow.

The desert tortoise is a herbivorous reptile with forage consisting of native winter and summer annuals, perennial grasses, cacti, a few half-shrubs, and some exotic

introduced species. The desert tortoise forages from March to November, and must have a varied diet in order to supply nutrients needed for reproduction, growth, and maintenance. On the Beaver Dam slope their diets consist mainly of red brome and brush muhly. They eat about 64% grasses, 27% forbs, and 6% shrubs. They also mine and consume soils high in calcium content.

Because of their diet, the desert tortoise will eat less than one-tenth of the percent of available plant material. This means that when less food is available the tortoise will likely increase its home range size so it can find the food it needs. Due to the seasonality of vegetation, tortoises tend to eat very heavily in early spring in order to tank up for the dry, relatively barren summer and fall seasons. The home range of the desert tortoise in Utah ranges from 5-91 acres.

Although tortoises are slow moving, in many cases they wander far outside their normal areas of activity in search of minerals, mates, and food sources. They may also travel these distances in response to seasonal fluctuations in resources and in temperatures, and may travel up to 1 mile per week.

### Life History

The desert tortoise is a polygynous species having several females to one male with females being subordinate to the males. Males may gather harems of up to four females, with the largest female receiving the most visits from the male. Some relationships between a male and female are maintained for several years.

Males find females by trailing the scent left by the female. Once the male has found a female, he will go to the female's burrow and

entice her out for courtship and mating. Once the female emerges the male will circle, bunt, ram, or bite the female until the female is ready to mate.

Females usually nest at the mouth of the burrow or under a large shrub, and may return to the same nest site year after year. On the Beaver Dams slope they will often take advantage of the washes and nest in a caliche grottoe. Eggs are laid from May to July, and hatch between August and October, with the incubation period being 90-120 days. Clutches may range from 2-14 eggs, with the size of the clutch depending on the size of the female, and 1-3 clutches may be laid annually. Eggs don't develop synchronously and some eggs may not hatch until the next spring, depending on environmental conditions. It is also thought that juvenile sex may be determined by the temperature of the eggs during incubation; thus, nest site selection is very important.

Young tortoises look like miniature adults. The only real difference is that the shells of young tortoises stay soft for the first 5 to 6 years; as such they are more vulnerable to predation. Juvenile desert tortoises have a very high mortality rate with only 5% or less reaching sexual maturity, which is between 17 and 20 years of age. Females will defend the nest and the hatched young because other tortoises will often antagonize or even kill the offspring of another.

## Threats and Reasons for Decline

The foremost threat to the desert tortoise is the loss of habitat. Expanding human settlement and development of arid regions has greatly reduced the number of individuals surviving today. Other factors suggested that have led to the decline of the desert tortoise include livestock grazing practices, military activities, and off road vehicles. Livestock using the areas that tortoises inhabit may compete for forage. Military activities and

ORV use threaten the habitat that the desert tortoise needs.

## Recovery Efforts

The desert tortoise was listed as a threatened species by the U.S. Fish and Wildlife Service in 1980. The U.S. Fish and Wildlife Service

in cooperation with the State of Utah and Washington County have developed a Habitat Conservation Plan to protect this species and its habitat. This plan established a preserve west of St. George, Utah, that was set aside specifically to conserve this species and its habitat.



Desert Tortoise distribution.

## References

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